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ABSTRACT

This design brief contains general information on school design; room functions, layouts, and area interrelationships; planning procedures; and costs intended for use by design teams and school authorities when planning new schools and extensions. It covers plan development and design philosophy and presents a series of design guidance notes for the building environment, areas and area limits, school entrances and external circulation, and access for the disabled. Descriptions of school areas needing design considerations are provided with emphasis placed on physical education halls and ancillary areas. Final notes pertain to parking, school yards, landscaping, and entrances and boundaries. Appendices offer a summary of playing court sizes. (GR)

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*PLANNING AND BUILDING UNIT*

**DEPARTMENT OF EDUCATION & SCIENCE**

# GENERAL DESIGN BRIEF

**FOR**

# POST-PRIMARY SCHOOLS

EF 005 770

Available at:

http://www.oecd.org//els/education/peb/docs.htm

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# Introduction

This **Design Brief** contains general information on school design; room functions, layouts and inter-relationships; procedures; and costs and is for issue to Design Teams and School Authorities for New Schools and for extensions.

It should be read in conjunction with the **Schedules of Accommodation**, the current **Design Team Procedures** and associated **Practice Notes** and the current **Approved Cost Limits** applicable to this project.

**DETERMINATION OF SCHOOL BUILDING REQUIREMENT**

- The school authorities make a formal application for accommodation on **Form ST1** "Form of Application for Post-Primary Accommodation".
- Planning section determines the **Projected Enrolment** for the school.
- The **Educational Worksheet** (EWS) is designed to enable school authorities to specify and quantify their requirements in the context of the totality of the school's curriculum.
- The requirements are influenced by projected enrolment; type of course (LC, LCVP, LCA, PLC etc.); special needs; pupil/teacher ratio; Ex Quota teachers; teacher working week; length of school week; and timetabling.
- The **EWS** together with the **Projected Enrolment** is issued to the school authorities for completion.
- The school's accommodation requirements are determined from an analysis of the Educational Worksheet completed by the school authorities. Arising from this analysis a **Schedule of Overall Accommodation** is drafted.
- For an existing school, the educational suitability of the accommodation is assessed and a **Schedule of Future Use for Existing Accommodation** is determined.
- The deficit of accommodation between the Overall Schedule and the Schedule of Future Use for Existing Accommodation is called the **Schedule of Residual Accommodation**.
- The above Schedules are issued to the School authorities for their acceptance.
- The **Schedule Of Overall Accommodation** (new school) and the **Schedule of Residual Accommodation** (extension) is the schedule of areas for the new building works and the total area indicated is the gross area of new build allowed.
- The areas of all spaces in the Schedules of Accommodation are inclusive of internal walls and space dividers. The Gross area in the schedules is the "total of all enclosed space measured to the internal face of the enclosing walls" and corresponds with the National Building Elements Definition.

## PROJECT PARTICULARS

- This **Design Brief, Schedules of Accommodation**, current **Design Team Procedures** and associated **Practice Notes** will be issued to the School Authorities and all members of the relevant Design Team once the Design Team has been appointed.

- Where any additional works are included as part of the Project, the scope of these works will be described and if appropriate, the cost applicable for these works will be indicated.

- The **Design Team Procedures** set out the procedures to be adopted by the Design Team at all stages of the Design and Construction process. There are 9 Stages, from Site Assessment through to Final Account.

- These Procedures are devised so as to ensure that all-new schools and extensions are designed to a high standard, while meeting the educational needs of the schools and ensuring value for money.

- All **Submissions, clearly referenced with the appropriate index mark of the DTP, by Design Teams** at all stages of the project to the **Designated Officer** of the administrative section shall be made as follows:-

    - Where the **Minister of Education & Science** is the client, directly to the **Building Unit.**

    - In all other cases, through the **Appropriate client.**

- **Approval** to proceed from one stage to the next stage of the DTP will be issued by the **Designated Officer** of the administrative section of the Building Unit.

- The **Basic Building Cost** (BBC) limit is generally expressed as a cost per **$m^2$** of floor area as stated in the Schedules of Accommodation and provides for the cost of the superstructure and the substructure of the building with associated Contingencies, Preliminaries, Insurance and VAT.

- The **External Works Allowance** (EWA) is expressed as a % of BBC.

- **BBC** and **EWA** are two distinct Cost Limits and should not be added together to form an overall Cost Limit for purposes of Cost Planning or for the Analysis of Tenders.

- **The Building Unit sets both Cost Limits together with Design Team Fees.**

- **A Planning & Briefing Meeting (PBM), as indicated in the DTP, Shall be arranged between the Client, Design Team Members and officers of the Building Unit.**

- **This Design Brief will be elaborated on at the PBM.**

- The BBC and EWA cost limits and Design Team fees will be issued at this meeting.

- The Design Team shall submit the division of fees for the approval of the Building Unit.

- The Client shall appoint a **Project Supervisor** for the Design and Construction stages of the Project.

# Development Plan

## GUIDANCE NOTES

**The overall development should maximise the potential of the site in relation to:**

- Access, with the main school entrance being visible and easily reachable from this point.
- Location and orientation of Building and PE hall.
- Allow for expansion by way of an extension to the school.
- Location and size of car parking.
- Location and sizing of Hard Play area.
- Allow for the Provision of grass playing pitches.

# Design Philosophy

## GUIDANCE NOTES

- Although each individual school design will vary due to the specific site, the educational brief and the ethos of the school, the Design Team's primary aim must be to provide the quality and character of environment appropriate to the educational aims of the school.
  The school should be a suitable space for intellectual, creative, physical and social activity.
  The school should be lively and welcoming, a place that the pupils will make their own with an atmosphere and sense of scale that is not over-powering, impersonal, or 'institutional'.

- The planning of the school should be seen not merely as a grouping of rooms listed in the schedule of accommodation but as a complex of spaces permitting the optimum degree of variety in use.
  The need is for a building that can accommodate that variety of activities, a school that will stimulate experiment will support and encourage interest in the pupils.

- It is important that the school be flexible and capable of future expansion. The design of the school should allow for future change and the possible addition of further accommodation.
  The possibility of expansion should be considered when determining the organisation and layout of the school so that it can still operate effectively if the school grows in size.

- The different functions of the Design Team should be integrated, combining Architectural Planning and Design, Structure, Services installation and Cost Efficiency to create a well designed cost effective, durable, low maintenance building. It should be possible to repair or replace components of the building such and fittings, finishes and services with minimum disruption and cost when necessary.

- This is best achieved by all disciplines within the design team working together from the beginning of the project and that the design is a collaboration by all the design team members.
  All participants in the design must contribute towards a common and comprehensive view of long and short-term needs of the school. All must agree at the inception of the project to the integration of the design factors for which they would normally be individually and separately responsible.
  This procedure should lead to a planned distribution of elemental costs within the overall cost target.

# Building Environment

## GUIDANCE NOTES

- Designers must have regard to provision of S.I. 44 10.3 of 3rd Schedule Safety, Health & Welfare at Work General Application Regulations, or as subsequently amended.
- All teaching spaces and habitable rooms should have natural daylight as the primary source of light.
- Where it is not possible to use daylight as the sole source of daytime light, artificial lighting may be used to supplement the available daylight. Glare must be avoided.
- The size and distribution of glazed areas should be carefully designed to provide a high level of natural light while avoiding glare.
- Where possible all teaching areas and habitable rooms should have a view of the outside environment.
- Thermal Insulation standards should meet or exceed the current Building Regulation standards, but should also be considered in the context of the balance of heat loss and gain so as to minimise the running costs of the school.
- Ventilation where possible should be natural ventilation by means of permanent ventilation and windows with opening sections. In determining the way in which a room is ventilated the Design Team should also consider acoustic factors, maintenance factors and running costs.
- Higher ventilation rates will be required for some specialist areas such as the home economics room, Workshops and science laboratories. Where Mechanical ventilation is provided, the installation should be designed to avoid noise in teaching areas.
- Toilets and changing areas should be mechanically ventilated if adequate cross ventilation cannot be achieved by natural means.
- Noise producing and noise sensitive spaces should be so located, designed and detailed as to minimise noise interference between them. A minimum noise reduction of 40 dB is required between teaching spaces, and between teaching spaces and other noise generating areas.
  A 225-mm wide solid block wall between such spaces provides adequate sound deadening.
- Acoustic privacy & security is needed in areas such as interview rooms where matters of a confidential nature may be discussed.
- Materials should be selected and designed so as to ensure that the Building and all components of the building are durable and low maintenance.
  Materials and finishes should be chosen and detailed in a manner to avoid weather staining which would detract from the appearance of the building.
- Windows must comply with the EU Directive (891654/EEL).
  All windows must be safe in closed and open positions.
- Windows should be double glazed, easy to clean and maintain, and have permanent ventilation louvres in addition to high and low level opening sashes. Vents should contain baffles for noise, wind and rain. Permanent vents and opening sashes should exceed the current guidelines set out in the Technical Guidance Documents to the Building Regulations, and should be designed to suit the class environment having regard to the high levels of humidity generally.

- The position and size of opening window sashes must take ease of operation into account and maintain an adequate level of safety, i.e. sashes opening dangerously over adjacent paths at ground floor level; use restrictors where necessary, etc.

- Doors of all teaching spaces and pastoral offices must have vision panels.

- Central Plant areas should be located so as to provide for economic distribution of services. Boiler plant room and switchrooms should not be located at the outer extremities of the building or as an annex.

- Pipework, cables and equipment should be easily accessible for maintenance but, wherever possible, hidden from view and made tamper-proof.

- The Planning & Building Unit will agree A Schedule of accommodation With School Authorities.

- It will contain an overall area limit to be measured from the internal face of the external walls together with a listing of all spaces and associated dimensions and areas.

- The overall area limit is inclusive of internal walls and space dividers.

Further Physical Design Parameters are included in the section 'Areas and Area Limits'.

# Areas and Area Limits

## Area Limits:

- The area limit is as shown in the schedule of accommodation and is "total of all enclosed space measured to the internal face of the enclosing walls" and corresponds with the National Building Elements Definition.

## Areas:

- Areas and dimensions of spaces are as defined in the schedules and are shown in the table below.
- The dimensions are centre to centre of internal walls and are centre of internal wall to the inner face of the outer wall.
- For PE halls (playing area) the dimensions are to the faces of the enclosing walls.

## Room Layouts:

- Shall be in accordance with current Department of Education and Science's Room Layouts. Where a layout is not given, the width to length ratio shall provide comfortable usage and permit Flexible use of the space.

## Heights:

- Ceiling heights should be considered in the context of the size and function of the space and should take into account the physical environment within that space.
- The minimum finished floor to ceiling height is 3.0m.
- In larger rooms such as specialist rooms and assembly areas the height should be in proportion to the size and take into account the function and any specialist requirements such as ventilation.
- All spaces have a minimum ceiling height of 3 m except those shown with ⇳ and ⇳⇳
  - ⇳ = Minimum ceiling height of 3.6 m. ⇳⇳ =Clear height of 7 m for PE Hall.
- Numbers shown ( ) are for the Number of Pupils to be accommodated in the Space.
- Dimensions for spaces not Included in the Layout Book are for guidance only.

### General Second Level Teaching Spaces and other Rooms/Spaces.

| Type of Space | Measurements | Area $m^2$ |
|---|---|---|
| General Classroom (30) | 7.2x6.6 m | 47.5 |
| Lecture Rooms (interconnected) (90) | 15.6x7.2 m | 112 |
| Group Room | 6x4.2 m | 25 |
| Music/Drama Area (30) | 11.4x7.2 m | 82 |
| Remedial Room & Store | 7.2x6.6 m + 2.4x2.4 m | 54 |
| Special Tuition Room & Store | 7.2x6.6 m + 2.4x2.4 m | 54 |
| Guidance Suite: (1 classroom +1 office) | 7.2x6.6 m + 4.7x3.2 m | 62 |
| Guidance Suite: (1 classroom +2 offices + waiting ) | 7.2x6.6 m + 2x4.7x3.2 m + 3x2 m | 83 |
| Religion Room, Meditation Area and Chaplain's Office (30) | 12.6x7.2 m | 91 |
| Mathematics Room (30) | 7.8x7.2 m | 56 |
| Social Studies Room (30) | 8.4x7.2 m | 60 |

| | | |
|---|---|---|
| Home School Community Liaison .(classroom + office) | 7.2x6.6 m + 4.7x3.2 m | 62 |
| Language Room (30) | 7.8x7.2 m | 56 |
| Multimedia Learning Laboratory (30) | 11.4x7.2 m | 82 |
| Science Laboratory & Preparation Area (24) | 10.2x7.2 m + 7.2x2.4 m ⇕ | 91 |
| Physics Laboratory & Preparation Area (24) | 10.2x7.2 m + 7.2x2.4 m ⇕ | 91 |
| Demonstration Room (tiered) (60) | 7.2x7.2 m ⇕ | 52 |
| Art/Craft Room & Store (30) | 14.4x7.2 m ⇕ | 104 |
| Home Economics Room, Flatlet & Stores (24) | 12.6x7.2 m + 7.2x1.2 m ⇕ | 100 |
| Home Economics Room (24) | 12x7.2 m ⇕ | 86 |
| Dress Design Room (24) | 9.6x7.2 m | 69 |
| Business/Computer Room (30) | 11.4x7.2 m | 82 |
| Commerce/Computer Room (30) | 9x7.2 m | 65 |
| Word Processing/Keyboarding Skills Room (30) | 9x7.2 m | 65 |
| Business Studies/Commerce Room (30) | 11.4x7.2 m | 82 |
| Business/Commerce Room (30) | 9x7.2 m | 65 |
| Technical Graphics /Cad Room (24) | 11.4x7.2 m | 82 |
| Construction Studies/Wood Technology Room & Store (24) | 14.4x9.6 m ⇕ | 138 |
| Technology Room. (30) | 14.4x9.6 m ⇕ | 138 |
| Wood/Technology Machining & Preparation Area | 14.4x4.6 m ⇕ | 66 |
| Engineering/Metal Technology Room & Store (24) | 14.4x9.6 m ⇕ | 138 |
| Library & Ancillary Stores | As defined in Schedule. | |
| Principal's Office. **Adjacent to general Office.** | 7.2x3.2 m | 23 |
| Deputy Principal's Office | 7.2x3.2 m | 23 |
| General Office. **Located in View of Main Entrance.** | 6 x 5 m. 30 $m^2$ for 500 pupils +.<br>5 x 4 m. 20 $m^2$ for less than500 pupils. | |
| Pastoral Offices. | 3.2x3.2 m. ea. No. As defined in Schedule. | |
| Staff Room | As defined in Schedule | |
| Meeting Room | 7.2x4.8 m | 34 |
| First Aid Room | 4.2 x 3.6 m | 15 |
| Caretakers Work Area | 4.2 x 3.2 m | 13 |
| Photocopy Room | 3x2 m | 6 |
| Project Storage. Secure Store. | As defined in Schedule. | |
| General Storage. Secure, Cleaners & general storage. | As defined in Schedule. | |
| General Purpose/Dining Area | As defined in Schedule. | |
| Kitchenette & Store | | 25 |
| Cloaks | As defined in Schedule. | |
| Lockers: If off corridors, recess by 0.9 m minimum | As defined in Schedule. | |
| Toilets (including toilets for staff & physically handicapped) Ratio 1:19; 1 WC per 19; 2 Urinals per 1 WC; 2 WHBs to 3 WCs/Urinals. One staff toilet, at least, to have shower. | As defined in Schedule. | |
| Boiler | | 40 |
| Social Areas | As defined in Schedule. | |
| Circulation. **Minimum Width of Corridors 2.4 m.** | As defined in Schedule. | |
| PE Hall **( Court Size 28x15 m )**<br>Allows 2m along each end line and along each sideline of court. **For schools with 450 pupils +.** | 32x19 m ⇕⇕ | 608 |
| PE Hall **( Court Size 24x13 m )**<br>Allows 1 m at each end line of court<br>Allows 1 m along one sideline and 1.6 m along second sideline of court. **For schools with 200 – 449 pupils.** | 26x15.6 m ⇕⇕ | 406 |
| PE Ancillary (Showers + Changing 2 x 34 $m^2$; toilets 10 $m^2$; Instructors facility 6 $m^2$; PE. Equipment storage 20 $m^2$) **For both sizes of halls.** | | 104 |
| General Storage. **For both sizes of halls.** | 6.2 x 3.2 m | 20 |
| Office. **For both sizes of halls.** | 3.2 x 3.2 m | 10 |

# School Entrances & External Circulation

## GUIDANCE NOTES.

- The main entrance is the point of access for all visitors and should reflect the character, atmosphere and importance of the school while remaining in keeping with the size of the building and the nature of the school site.
- Some protection from the weather prior to entering the main door should be considered.
- Once in the School the visitor should be able to find the Reception Areas without difficulty
- Depending on the size and layout of the school, separate entrances for pupils may be proposed. Such entrances should be convenient to pupils arriving by private or public transport or by foot.
- Suitable access routes from drop off points to the entrances should be provided.
- If bicycle racks are provided, these should be adjacent to the pupil entrances.
- The Access to the site should be prominent and easy to find.
- Where a suitable drop-off point for pupils from buses and cars is not available within a reasonable distance, provision for a lay-by to facilitate buses and/or cars should be made.
- This lay-by should not be located within the schools grounds and arrangements should be made if necessary to cede the appropriate land to the Local Authority.
- Provision of turning circles and on site drop-off points should be avoided.
- The School should be located near to the main Access and clearly visible from that entrance.
- The Main/Visitors entrance to the School should be clearly visible for pedestrians entering the site and should be both clearly visible and easily accessible from the car-parking area.
- On-site roads and vehicular access should be kept to a minimum while ensuring ease of parking and access to the main school entrance doors.

# Access for All

## GUIDANCE NOTES

- The criteria set out in the booklet "Access for the Disabled; Minimum Design Criteria", published by the National Rehabilitation Board, should be considered in all cases.
- All new schools and school extensions should be designed so as to provide Access for All.
- A disabled person should not be disadvantaged by Design limitations.
- Full access for the Disabled should be provided in all new building works.
- In all design solutions comprising of two or more floors a disabled persons lift and suitable fire escape refuges shall be provided.
- Where small changes of level within the building are unavoidable ramps in accordance with the Building Regulations Guidance Documents and the NRB guidelines may be permitted.
- Provision should be made for Disabled access from the Access to the school through all routes to all entrances.
- At least one toilet suitable for use by the physically handicapped shall be provided, opening off main circulation.
- In larger schools additional provision may be required.
- One toilet suitable for the physically handicapped shall be provided off the foyer of the PE hall.
- At least one car-parking space should be reserved for wheelchair use and the number of reserved wheel-chair accessible spaces should be in accordance with the Building Regulations and the current NRB guidelines.

# Description of Spaces

**GUIDANCE NOTES**

## General:

- The school should provide a safe and secure environment for Teaching and Learning.
- The design solution for the School should ensure ease of Circulation and orientation for Pupils, Staff and Visitors.
- On accessing the school via any entrance, it should be possible to move to any point in the school without meeting an area of congestion.
- Schools operate a 42 Period Week, each of 40 minute Duration.
- Many Schools operate a teacher-based system resulting in the movement of all pupils every 40 minutes.
- As a result of this movement Careful consideration must be given to circulation with the GP area and the Social areas acting as some relief.
- Minimum width of corridors shall be 2.4 m.
- Lockers and other obstructions must be recessed and must not be included in the 2.4 m width.
- The general Purpose/Dining area should provide a Social Heart to the School and taken together with associated circulation, it should provide a sense of openness and Community within the School while at the same time enhancing general circulation.
- Careful consideration should be given to grouping of rooms and in particular having some general classrooms near Specialist rooms will result in less travel by pupils at each change of class.
- The following rooms/spaces are frequently used by visitors/community and should be located so that it is not necessary to enter the general teaching area used by pupils.
    - Principal's Office.
    - General Office.
    - GP area.
    - PE hall.
    - Meeting Room.
    - Home School Community Liaison Facility.
    - First Aid Room

## Information and Communication Technology (ICT).

- All Teaching and Habitable rooms shall be Networked. Cabling to ISO 11801:1999 standard. One Network point is required except as stated below under the description of the various spaces.

## Description of Spaces:

- All teaching spaces should be in accordance with the Department of Education standard room layouts.

### Classrooms

- General classrooms are used for the teaching of theory.
- One or more classrooms should be associated with each of the specialist teaching spaces providing classrooms for subject departments and an interdisciplinary link between related subject areas.

### Lecture Rooms

- These are two large interconnected classrooms capable of seating 90 pupils. A folding partition should be provided between the two rooms, which must provide reasonable acoustic security and include one door.

### Group Room.

- This is a small classroom for the teaching of small classes taking different options.

### Music/Drama Room

- The activities that will take place in this area will depend on the emphasis on Music and/or Drama in the school.
- The area should be capable of accommodating a class of 30 pupils, facilitating choir, instrumental work, drama presentation etc.
- It should, where possible, be staged off the GP area.
- In such a case a folding partition should be provided between the Music/Drama room and the GP area, which must provide reasonable acoustic security between the two spaces.

### Special Tuition Room & Store/Remedial Room.

- The Special Tuition Room should be adjacent to or closely associated with one or two general classrooms and it would also be desirable to have the location of the Special Tuition Room reasonably close to the Library.
- It may be necessary to provide a number of networked PC's to enable interactive Learning.

### Guidance Suite

- The Guidance Suite should be seen to be separate from Administration and should be located off one of the main arteries of pupil circulation. Preferably, it should be close to the Library and conveniently reached from one of the school's entrances. It should consist of a Guidance Office of 15m2 associated with a general classroom.
- The Guidance Office will also be used when interviewing one or two people and should be designed to create an informal comfortable atmosphere. A high level of acoustic security will be required.

### Religion And Meditation Room + Chaplains Office.

- This area will normally comprise one standard General Classroom of 47.5 $m^2$ separated from a smaller meditation area of 30 $m^2$ by an acoustically secure folding partition.

- An adjoining Chaplains Office of 15 $m^2$ Shall be provided.

## Mathematics Room

- Although much of the mathematics teaching will be conducted in general classrooms, a special Mathematics Room may be provided.

- This Mathematics Room is somewhat larger than standard classroom size to facilitate occasional exercises in applied mathematics or computer operations requiring larger table top space and a greater number of electrical points.

## Social Studies (History & Geography)

- Audio visual aids are in frequent use in Social Studies areas which together with the relatively high reference demands of history teaching would suggest the need for easy access to the library from Social Studies Area.

- If possible the Social Studies areas should also be reasonably close to the Science and Demonstration rooms.

- The Geography room shall have south facing eye level windows to facilitate shadow measurements.

- It should also be provided with black-out blinds.

## Home School Community Liaison.

- This suite, if provided, consists of a classroom sized room and office.

- The design and layout of the classroom should be similar to a standard classroom and may be used for Parental Education.

- It should be located so that it is not necessary to pass by the teaching areas to reach it.

## Language Room

- The language room while being equipped to provide specialist teaching/learning language facilities should not be considered as being a self-sufficient or independent unit on the one hand or the sole language learning/teaching facility on the other.

- In general, it may be assumed that a Language room will be associated with 1 or more classrooms thus forming a Languages Suite.

## Multimedia Learning Laboratory.

- This room consists of a network of 31 PC's. It replaces the language laboratory as the actions of the tape recorder can be simulated by software.
- It may be necessary to provide a satellite connection.
- The room can be used for all subjects and will only be provided where it is justified by utilisation.

## Science Laboratories & Preparation area.

- A science laboratory should be equipped to enable 24 pupils to follow courses of a general science character, and should be connected to a preparation area.
- The preparation area besides facilitating preparation of class material will contain or store equipment of a more specialised nature in the fields of Physics, Chemistry, Biology and Agriculture Science.
- A small optical laboratory (daylight excluded) should be linked with one laboratory preferably with Physics Laboratory. Refer to the Physics Laboratory Layout.
- A secure Chemical Store without windows should be provided with good permanent ventilation.
- Fume cupboards should also be permanently ventilated in accordance with relevant IS and BS standards and to Design Note 29.
- Blackout facilities should be provided in at least one of the Science laboratories.
- To facilitate window experiments and shadow measurements at least two of the laboratories shall have south facing eye level windows.

## Demonstration Room

- The Demonstration room should be tiered to provide seating for 60 students. Due to the high occupancy good ventilation to this room is essential.
- The Demonstration room should be linked to one Science Preparation area to facilitate preparation of demonstration material in the Science Preparation area and ease of transfer of prepared material/equipment to the Demonstration room.
- Blackout facilities shall be provided in this room.

## Arts And Crafts Room

- The overall area allocated may be treated as a space designed to accommodate pupils in a variety of activities, some wet, other dry.
- Storage, screening and display space may be provided within the area by means of moveable furniture units.
- Consideration may be given to the display of art work so that it is visible from the main circulation.
- One section will be required to house a kiln with associated drying racks and trough.
- Art/Crafts Rooms should have a high level of natural lighting. Glare and shadows should be avoided.
- Art/Crafts Rooms should have windows that provide a view of the external landscape and where possible should have direct access to the outside.
- A clear Door Opening of 900 mm is required.
- Art/Craft rooms must be located at ground level.

## Home Economics Rooms and Dress Design

- The Home Economics rooms and Dress Design rooms should be located near to each other.
- The Home Economics rooms should if possible be located close to the Science rooms and the Arts & Crafts rooms.
- The Home Economics rooms should have a durable non-slip floor covering.
- A high level of ventilation is required for the Home Economics rooms.
- This ventilation should be quiet in operation.

## Business/Computer & Commerce/Computer Rooms.

- These rooms are intended for ICT studies. They will have a network of 31 PC's. These teaching spaces should be reasonably close to each other to facilitate interchange of equipment.
- These Rooms may be used by both post primary pupils during the day and by adults for evening classes.
- Some consideration should therefore be given to the location of this suite having regard to its possible use after normal school hours.
- These rooms should be designed to provide a high level of natural light without glare.
- Special consideration should also be given to the need for security in these rooms.

## Technical Graphics/CAD Room

- This Room should also be located within reasonably proximity of the Construction studies, Engineering and Technology rooms to facilitate interchange of drawing equipment within these areas.

- It will be equipped with a number of networked PCs.

## Construction Studies/Wood Technology Room

- This room is also used for the teaching of Materials Technology (Wood) at JC level.

- This space should be designed to accommodate 24 students. The minimum ceiling height should be not less than 3.6m.

- This area is an area of high noise emission and it is therefore necessary to ensure that either it is located away from noise sensitive teaching spaces such as the Library or classrooms, or that adequate acoustic insulation is provided.

- Access for the delivery of wood and machinery via the Preparation area is required, and the Construction Studies/Wood Technology Room should be located so as to facilitate such deliveries and be directly accessible from the enclosed yard.

- It should have direct access to the Wood/Technology Machining & Preparation area with visual access from the Preparation area to the room.

- Where dust emitting machines are required these machines should if possible have in-built dust extraction. Adequate dust extraction must be provided.

- It should be located on the Ground floor.

## Technology Room

- This space should be designed to accommodate 24 students. The minimum ceiling height should be not less than 3.6m.

- This area is an area of high noise emission and it is therefore necessary to ensure that either it is located away from noise sensitive teaching spaces such as the Library or classrooms, or that adequate acoustic insulation is provided.

- Access for the delivery of materials and machinery via the Preparation area is required, and the Technology room should be located so as to facilitate such deliveries.

- The Technology room should have direct access to the Woodwork/Technology Machining & Preparation area with visual access from the Preparation area to the room.

- It will have a number of networked PCs.

- Where dust emitting machines are required these machines should if possible have in-built dust extraction. Adequate dust extraction must be provided.

- It should be located on the Ground Floor.

## Wood/Technology Machining & Preparation area

- A single Preparation area should be located between Construction Studies Room and the Technology room with direct access to both rooms.
- Direct access for the delivery of materials and machinery is required, and this Area should be located so as to facilitate such deliveries and be directly accessible from the enclosed yard.
- Where dust emitting machines are required these machines should if possible have in-built dust extraction. Adequate dust extraction must be provided.
- It should be located on the Ground Floor.

## Engineering /Metal Technology Room

- This room is also used for the teaching of Materials Technology (Metal) at JC level.
- This space should be designed to accommodate 24 students. The minimum ceiling height should be not less than 3.6m.
- The Metalwork room is an area of high noise emission and it is therefore necessary to ensure that it is located away from noise sensitive teaching spaces such as the Library or classrooms, or that adequate acoustic insulation is provided.
- Extraction is required from the hot metal area.
- It should be located on the Ground Floor and be directly accessible from the enclosed yard.

## Library

- The Library is one of the most important areas in the School and should therefore be conveniently related to all other learning/teaching areas but particularly to the Social Studies area and to a number of general classrooms and group rooms.
- The Library is a dual-purpose resource area and teaching space.
- The Library should include two stores, a book-store and a secure store for the audio visual equipment as per the Standard layouts.
- Provision should be made for computer connections, networking with the Administration area and for connection with the Internet.
- The Library should be glazed onto the circulation area to provide informal supervision.

## Principal's and Deputy Principal's Office.

- The Principal's room should be located beside the General office with easy access to that office. It should also have a separate access door to the main circulation.
- Access to the Principal's office for visitors should be via the School Secretary.
- The Principal's Room and the Vice-Principal's room are multi-functional and should be capable of being used as an office, an interview room, a meeting room, and a study.
- It may be used for meetings with parents. The room should be comfortable and private with good sound insulation.
- The Deputy Principal's room may be located near the General office, but consideration should be given to locating this room elsewhere in the school to facilitate school supervision and in particular if a separate pupil's entrance is provided.
- The School Authority's preference should be considered in this regard.

## General Office, Reception & Waiting Area.

- The General office should be located near the main entrance easily visible from the entrance doors.
- The General Office should be located beside the Principal's Office with easy access to that office.
- It should have a counter or hatch directly to the Entrance foyer for queries from visitors or pupils.
- The counter or hatch should be located so that a group of people waiting at the hatch/counter are out of the main circulation route and will not obstruct circulation through the school.
- A waiting area off the main circulation and adjacent to the General Office should be provided.
- Two Network Computer points must be provided in the General office.
- For larger schools above 700 pupils, a third network point may be considered.

## Pastoral Offices.

- Pastoral rooms have multiple uses. They may serve as rooms for "Year-Heads" or school tutors, and may be used for pupil or parents interviews.
- Pastoral rooms should be located off main circulation or social areas in the school.
- The wall between the social area and the pastoral room should be glazed for better integration with the social area.

## Staff Accommodation

- The staff room can be an integrated Social and Work area. The separation of the areas can be achieved by appropriate arrangement of furniture.
- It should be domestic in character, a place where teachers can relax, exchange views etc.
- It will have a number of networked PCs in the ratio of 1 per 10 teachers and a minimum of 2 PCs.
- The PC area should be integrated with the normal work area.
- Access to kitchenette facilities is required.
- Lockers when provided should not be intrusive.

### Meeting Room

- A meeting room, where provided should be located near the Administrative area and may be used by Boards of Management, staff, Parent Groups or pupils. The room should be comfortable and welcoming and should be furnished accordingly.
- It should be located so that it is not necessary to pass by the teaching areas to reach it.

### First Aid Room

- This is intended for the administration of first aid and a rest room for sick pupils.
- It should be located close to the General Office for the purposes of control and supervision.

### The Caretaker's work area

- The Caretaker's work area should be located within the school but with good access to the outside. It should be located near the External Store.

### Photocopy Room

- The photocopier should be located near the Administration room and easily accessible from it.
- It should also be located so that it can be used easily by Staff and by authorised pupils.

### Project Storage

- This store is for the storage of examination projects. This store should be designed as a secure store. If possible it should be located near to the Practical Subjects teaching areas.

### General Storage.

- This includes secure store, Cleaner's store(s) and general storage.
- In larger Schools it may be necessary to distribute storage in different locations.

### General Purpose/Dining Area.

- The General Purpose/Dining Area should provide the social heart of the school.. It should provide a sense of openness within the school, enhancing general circulation. This area should not be separated from the general circulation.

- The General purpose/dining area besides providing a dining area may also be used by both school and community for social events such as school plays or school assemblies. It should have easy physical access from the main entrance and it should be possible to screen it from the rest of the school.

- The GP room/Dining area & kitchenette is used to prepare and dispense light refreshments and should be equipped with a cooker, water boiler, fridge and suitable sink, and divided from the general purpose dining area by a counter not less than 3m long, fitted with a roller shutter.

- It should also have a small store attached.

- In designing the location of the counter to the GP area, care should be taken to ensure that queues to the counter do not cause circulation difficulties.

## Cloaks/Lockers

- Cloaks and Lockers should be located and designed in such a way as to avoid circulation congestion.

- Lockers and cloaks should be located near to the main pupil exits. If Locker rooms or Cloakrooms are provided they should be easily supervised and should have two entrances/exits each to avoid bottlenecks.

- Consideration may be given to allocating the Cloaks & Locker area to more generous locker spaces within the general social/circulation area.

- If lockers are located in the circulation area enough space should be allowed for the lockers, for an area in front of the lockers to access the lockers and sufficient area to allow some congregation without blocking the circulation routes. A recess of 0.9 m is suggested.

## Toilets

- Toilets should be provided for pupils and staff in the approximate ratio of 1 Toilet (including urinals) per 19. For boys toilets the ratio of 2 urinals to 1 WC should be used.

- Wash-hand basins should be provided on the basis of 2 WHBs to 3 WCs or urinals.

- Toilets should be so located in the school as to minimise unnecessary circulation and in areas that can be easily supervised.

- At least one toilet suitable for use by the physically handicapped shall be provided, opening off the main circulation. In larger schools additional provision for the physically handicapped may be required.

- As the school may be used in the evenings for community use, access to some staff toilet facilities within a restricted area without allowing access to the full school is required.

- At least one staff toilet is to have a Shower.

## Social Areas

- Social areas provide for social dialogue and relaxation for pupils.
- The design should combine the use of the social area with circulation to avoid bottlenecks.

## Circulation

- The design solution for the School should ensure ease of Circulation and orientation for Pupils, Staff and Visitors.
- On accessing the school via any entrance, it should be possible to move to any point in the school to meet an area of congestion.
- Consideration may given to easing areas of possible circulation congestion by using the GP area and the Social areas acting as some relief.
- Minimum width of corridors shall be 2.4 m.
- Lockers and other obstructions must be recessed and must not be included in the 2.4 m width.

# Physical Education Hall & PE Ancillary

## GUIDANCE NOTES

### Aims of Physical Education

- To contribute to the physical well-being of the pupil through a programme aimed at the development of a level of fitness.
- To develop appropriate motor skills enabling the pupil to participate in everyday life situations and in recreational, sporting and creative activities.
- To provide opportunities to require knowledge in relation to the following.
    - Games and Athletics.
    - Gymnastics.
    - Dance.
    - Aquatics.
    - Health & Fitness.
- The application of skills in the full game situation will require an area and a surface as recommended by the Governing Bodies of the relevant sport.
- Skills development can take place in the PE hall, Hard Play Area or Grass.
- A well structured games programme will take account of the games which are indigenous to the area and should also include a variety of opportunity as outlined in the "Rules & Programme for Secondary Schools"
- **To assist School Authorities on the games that can be selected, Data on Court sizes and appropriate safety Zones are detailed later in the Appendix.**

### Physical Education Hall

- The PE Hall is a teaching area that caters for the teaching and learning of appropriate PE skills. It may also be used occasionally as an examination hall or for functions requiring a large assembly area.
- The PE Hall should be physically integrated with the main school building where feasible but should also be capable of being screened from the rest of the school to facilitate after-school use. Mechanical and Electrical services should be designed accordingly.
- The PE Hall should have a minimum height in accordance with its proposed function. Normally a clear height of 7 m will be specified.
- Care should be taken to ensure that nothing projects from the walls that would prove hazardous while the hall is in use. All arises should have a minimum radius of 10 mm.

## Physical Education Ancillary

- A foyer must be provided as the main entrance to the PE facility.
- A PE store should be provided directly off the PE hall for the storage of PE equipment.
  The opening width of this store should be adequate to allow the transfer of large pieces of equipment in and out of the store without difficulty.
- The PE Ancillary area should have access from the playing fields and hard play area as well as from circulation within the school.
- The changing rooms, located off the foyer, should have direct access to the PE hall.
  As the community may use the PE hall in the evenings, the Changing rooms should be capable of being used as either male or female changing rooms. Not less than 4 showers should be provided in each changing room.
- Not less than 1 male and one female WC and a Disabled WC should be provided off the foyer and be accessible from the general circulation and not directly from the changing areas.
- The Instructors office should have a direct view of the PE Hall with ease of access into the hall. A small WC/shower area should be provided off the Instructor's office.
- A general store shall be provided for the storage of furniture etc. Consideration should be given to having direct access to the PE hall and also to the outside for the storage of grass cutting equipment.
- An office shall be provided off the foyer and directly on entry from the main circulation of the school. This office will be the main control and supervisory point for all entering the PE facility.

### Schedule of accommodation for 608 $m^2$ PE hall

| No. of Spaces | Type of Space | Measurements | Area $m^2$ |
|---|---|---|---|
| 1 | Sports Hall **(Court Size 28 x 15 m )**<br>Allows 2m clear space around court | 32x19 m | 608 |
| 1 | P.E. Ancillary (Showers + Changing 2 x 34 $m^2$; toilets 10 $m^2$;<br>Instructors facility 6 $m^2$; PE. Equipment storage 20 $m^2$) | | 104 |
| | Circulation (foyer & stairs) | | 54 |
| 1 | General Storage | | 20 |
| 1 | Office | | 10 |
| 1 | Boiler (if required) | | 10 |
| | | Gross Area: $m^2$ | 806<br>(796) |

## Schedule of accommodation for 406 $m^2$ PE hall

| No. of Spaces | Type of Space | Measurements | Area $m^2$ |
|---|---|---|---|
| 1 | P.E. Hall ( **Court Size 24x13 m** )<br>Allows 1 m at each end line of court<br>Allows 1 m along one sideline and 1.6 m along second sideline of court | 26x15.6 m | 406 |
| 1 | P.E. Ancillary (Showers + Changing 2 x 34 $m^2$; toilets 10 $m^2$;<br>Instructors facility 6 $m^2$; PE. Equipment storage 20 $m^2$) | | 104 |
| | Circulation (foyer & stairs) | | 54 |
| 1 | General Storage | | 20 |
| 1 | Office | | 10 |
| 1 | Boiler (if required) | | 10 |
| | | Gross Area: $m^2$ | 604<br>(594) |

## Notes:

i) An addition of 30% to the Basic Building Cost Limit shall apply to the Hall area plus the associated ancillary accommodation (changing rooms, etc.). This addition is to allow for the provision of a balcony/viewing gallery over the ancillary accommodation (the area of which is not included in the approved gross floor area), a sprung maple floor to the playing area and a minimum 7 m clear height to the playing area. The additional allowance shall apply whether the Hall and ancillary accommodation comprises a stand-alone building or is part of a larger building or extension.

**The area applicable for this cost limit is as follows:**

| | | |
|---|---|---|
| **608 $m^2$ hall** | **806 $m^2$ with Boiler** | **796 $m^2$ Without Boiler** |
| **406 $m^2$ hall** | **604 $m^2$ with Boiler** | **594 $m^2$ Without Boiler** |

ii) The 406 $m^2$ hall applies to schools with a projected enrolment of 200-449 pupils.

iii) The 608 $m^2$ hall applies to schools with a projected enrolment of 450 pupils and above.

iv) The above schedules apply to both integrated halls and stand alone halls.

v) The subdivision of the PE ancillary area shall be as follows:

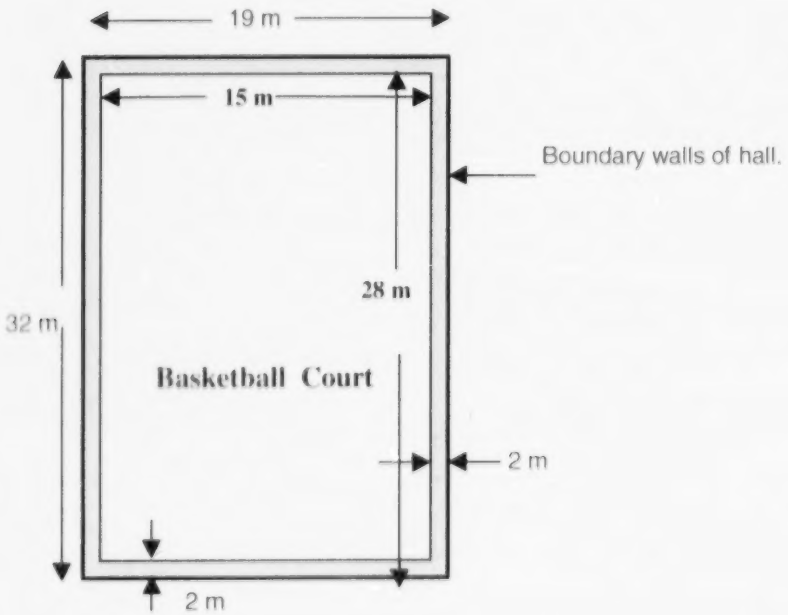
| | |
|---|---|
| PE Equipment Storage | 20 $m^2$ |
| Instructor's facility, includes shower + WC + WHB | 6 $m^2$ |
| Toilets. 2 WC's + Disabled persons WC Off foyer. | 10 $m^2$ |
| Changing rooms & showers. 2 x 34 $m^2$ Minimum of 4 showers each. No WC's.<br>A rectangular area will give a more effective solution and a minimum width of 2.4 m is suggested. | 68 $m^2$ |

**The Diagrams that follow shows the layout of Basketball & Badminton courts in both sizes of halls.**

# PE Hall 608 $m^2$-- Department of Education and Science.

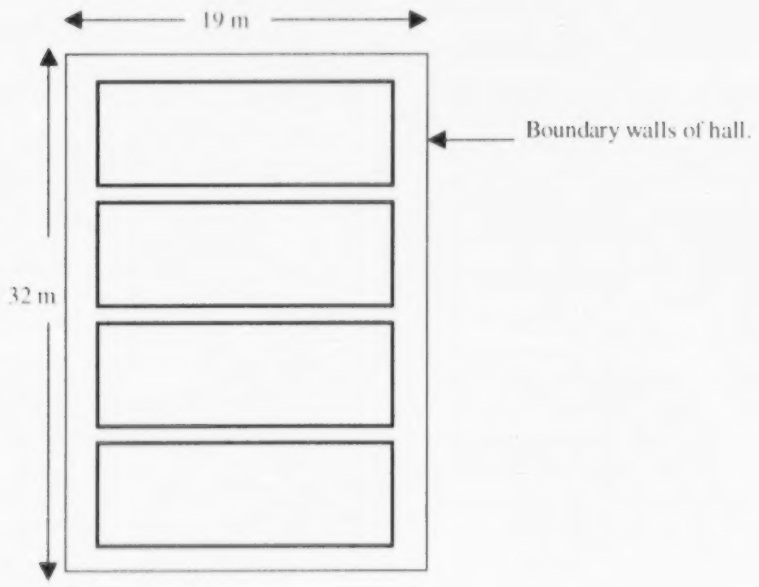
## Basketball

- Court Size: 28 m x 15 m.
- Hall Size: 32 m x 19 m.
- Distance between each end line and end wall: 2 m
- Distance between each sideline and side wall: 2 m
- The height of the ceiling or the lowest obstruction shall be at least 7.00 m.
- The playing floor shall be of sprung maple.
- The playing surface shall be uniformly and adequately lighted.
- The light units shall be placed where they will not hinder the players' vision.
- The level of lighting shall not be less than 500 lux measured 1.5 m above the playing court.
- The basketball goals shall be ceiling mounted and electrically operated.
- The backboards shall be made of suitable transparent material .
- Two scoreboards shall be provided, one on each end wall.



# PE Hall 608 $m^2$ --Department of Education and Science.

**Badminton Courts**




- Wall from base-line 2.8 m
- Wall from sideline 2.0m
- Between parallel courts 1.2 m

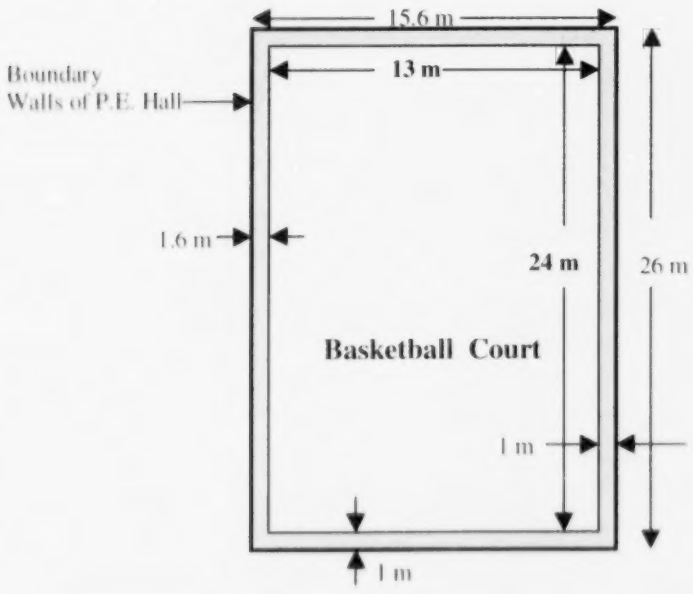
**Simultaneous Play:**

- Leisure All four Courts
- National Competition. Alternate Courts.

# PE Hall 406 $m^2$ -- Department of Education and Science.

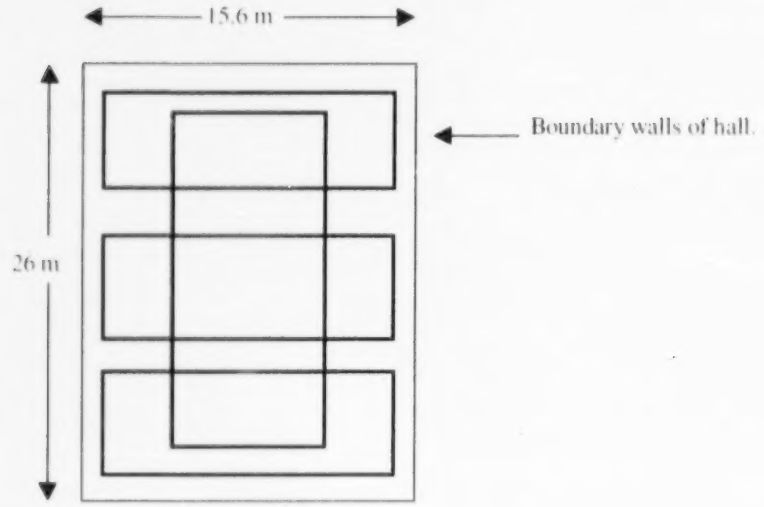
## Basketball

- **Court Size: 24 m x 13 m.**
- **Hall Size: 26 m x 15.6 m.**
- Distance between each end line and end wall: 1 m
- Distance between one sideline and one side wall: 1 m
- Distance between second sideline and second side wall: 1.6 m
- The height of the ceiling or the lowest obstruction shall be at least 7.00 m.
- The playing floor shall be made of sprung maple.
- The playing surface shall be uniformly and adequately lighted. The light units shall be placed where they will not hinder the players' vision.
- The level of lighting shall not be less than 500 lux measured 1.5 m above the playing court.
- The basketball goals shall be ceiling mounted and electrically operated.
- The backboards shall be made of suitable transparent material .
- One scoreboard shall be provided at the centre of one side wall.



# PE Hall 406 $m^2$ -- Department of Education and Science.

## Badminton Courts




**Leisure Courts. 3 Across hall**

- Court Size 12.6 x 6.1 m
- Wall from base-line 1.8 m
- Wall from sideline 2.0m
- Between parallel courts 1.85 m

**National Competition Court Lenghtwise on hall**

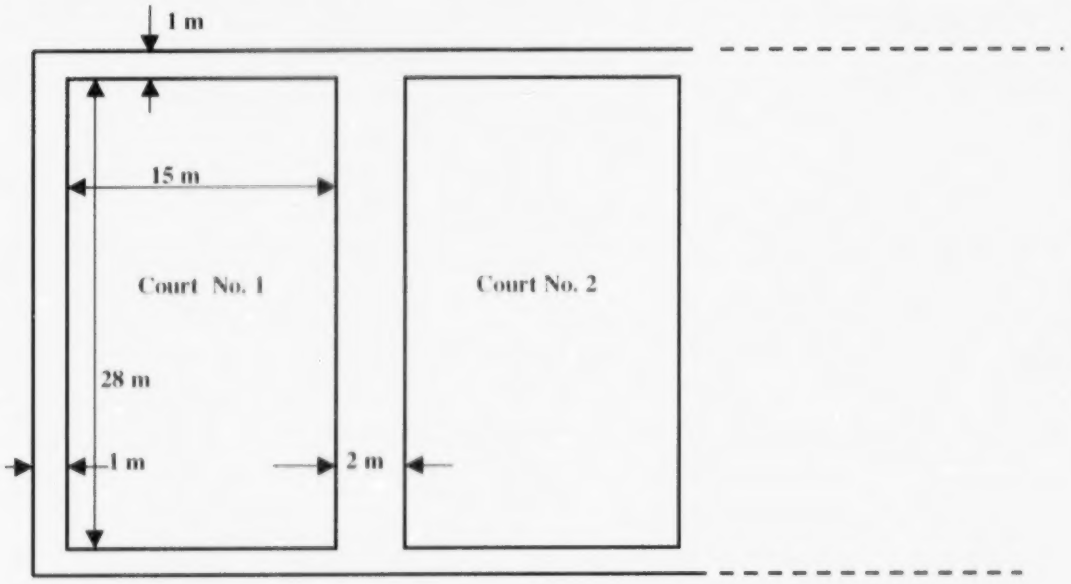
- Court Size 13.4 x 6.1 m
- Wall from base-line 6.3 m
- Wall from sideline 4.75 m

# External Works

## GUIDANCE NOTES

**All works described in this section are covered by the EWA.**

### Outdoors Hard Play Area. – Basketball Courts.




| | | | |
|---|---|---|---|
| **Overall area per Court** | **510 m²** | **30 x 17 m** | **Playing Size 28 x 15 m** |

### Number of Courts:

| Courts per School. | Area. |
|---|---|
| 2 for schools less than 250 pupils. | 1020 m² |
| 3 for schools with 250 – 349 pupils. | 1530 m² |
| 4 for schools with 350 – 499 pupils. | 2040 m² |
| 5 for schools with 500 – 799 pupils. | 2550 m² |
| 6 for schools with 800 + pupils. | 3060 m² |

**If site restrictions apply, the following areas and dimensions may be considered but it is essential that the proportionality be maintained.**

| | | | |
|---|---|---|---|
| i) | **Overall Area of court 448 m²** | **28 x 16 m** | **Playing Size 26 x 14 m** |
| ii) | **Overall Area of court 390 m²** | **26 x 15 m** | **Playing Size 24 x 13 m** |

- Adequate surface water drainage shall be provided from all hard play areas without compromising the safety of the user during play.
- In providing such drainage, consideration must be given to the possibility of some games being played across the Basketball Courts.
- In an existing school, the existing Hard Courts should be retained where possible.
- If additional courts are required, the cost of these courts should be assigned to the External Works Allowance.
- The hard Courts should be located adjacent to the external vehicular circulation and also to the changing rooms associated with the P.E. Facility.
- A 2.5m high plastic coated chain link fence around the courts, with lockable access gates should be provided.
- Direct access from the changing rooms to external play facilities should be possible without going through the PE facility.

## Playing Pitches:

- Where site area and configuration permits, an area should be reserved suitable for use as a practice playing field. The levelling and preparation of this area for use as a pitch is not part of this brief and the cost of such work should not be included in the Project costs.
- Direct access from the changing rooms to the pitch should be possible without going through the PE facility.
- The following data on sizes of playing areas are given for informational purposes.

## Gaelic Games

- Playing Area 130 – 145 x 80 – 90 m

## Hockey

- Playing Area 91.44 x 54.86 m

## Soccer

- Playing Area 90 – 120 x 45 – 90 m

## Rugby

- Playing area 100 x 69 m In-goal 69 x 22 m Overall 144 m x 69 m

**An Appropriate Safety Zone around the playing area for each game should be allowed.**

## Car-parking:

- Provision should be allowed in the ratio of one space per permanent staff member plus one Visitor/Parent car space per 100 pupils.
- At least one car-parking space should be reserved for wheelchair use and the number of reserved wheelchair accessible spaces should be in accordance with the Building Regulations and the current NRB guidelines.
- Should be designed to utilise as far as possible existing site access roads or in a new school the access road to the main entrance. Spaces should be designed in a cost-effective manner.
- Should be located adjacent to the Staff and Visitor entrances to the School. If a separate Staff entrance is provided, the location of this access should be convenient to the car-park. Separate car-parks for staff and visitors are not recommended.

## External Store, Covered Area and Yard.

### External Store

- An external store should be provided adjacent to the Practical Subjects rooms.
- This store should be provided with lighting and background heating, to ensure that materials stored therein do not degrade.
- The size of this store is 10 x 5 m - 50 $m^2$

### Covered Area

- Where a Construction Studies Room is Provided, an adjacent covered area shall be provided. The size of area is 6 x 5 m - 30 $m^2$

### Yard

An enclosed yard shall be provided. This shall include the entrances to:

- Boiler Construction Studies Room
- Engineering Room
- Technology Room
- Boiler Room

- If practicable, Fuel storage shall be in the enclosed yard.
- The external yard and the boiler-house should be located so as to minimise external vehicular circulation.

### Bicycles

- Provision of parking for bicycles, if deemed appropriate should be easily and safely accessible from the student entrance to the site and such bicycle parking should be adjacent to the main student entrance.

## Landscaping and Shrub Planting:

- Provision should be made for the preparation and landscaping of the area around the school and between the school and the site entrance.
- Such landscaping should be simple, cost effective and easy to maintain.
- The Design team should consider the Natural paths and routes through the site to the school entrances in determining the appropriate location and Extent of paths provided.
- Large areas of hard landscaping should be avoided.
- An allowance for planting of trees and shrubs should be made. Such shrubs and trees should help define the site boundaries and external circulation routes, and should be hardy, durable and low maintenance.

## Entrance Gates and Boundary

- In a new school site, the cost of the main entrance gates and front boundary treatment is included in the External Works Allowance.
- The provision of other boundary fencing and walls does not form part of the External Works Allowance.
- Where for security reasons, boundary protection is required, the cost should be minimised, subject to the suitability of the boundary treatment for the location.
- Should such boundary protection be required, the nature, cost and scope of the works should be indicated at Stage 2 and a submission made justifying the additional cost of such works.

**The following will form part of the schedule of accommodation:**

## External Requirements (EWA):

| No. of Spaces | Type of Space | Measurements | Area $m^2$ |
|---|---|---|---|
| 1 | External Storage | 10 x 5 m | 50 |
| 1 | Covered Area for Construction Studies | 6x5 m | 30 |
| Enclosed Yard | Enclosing external store, covered area, entrances to construction studies room, engineering room, technology room, boiler room and if practicable fuel storage. | | |
| | Car Parking Spaces | | |
| Hard Courts | Hard Play Area | | |

The formulae for Car Parking and for Hard Courts are given earlier in this section.

# Appendix – Summary of Playing Court Sizes

## International Court Sizes except where otherwise stated)

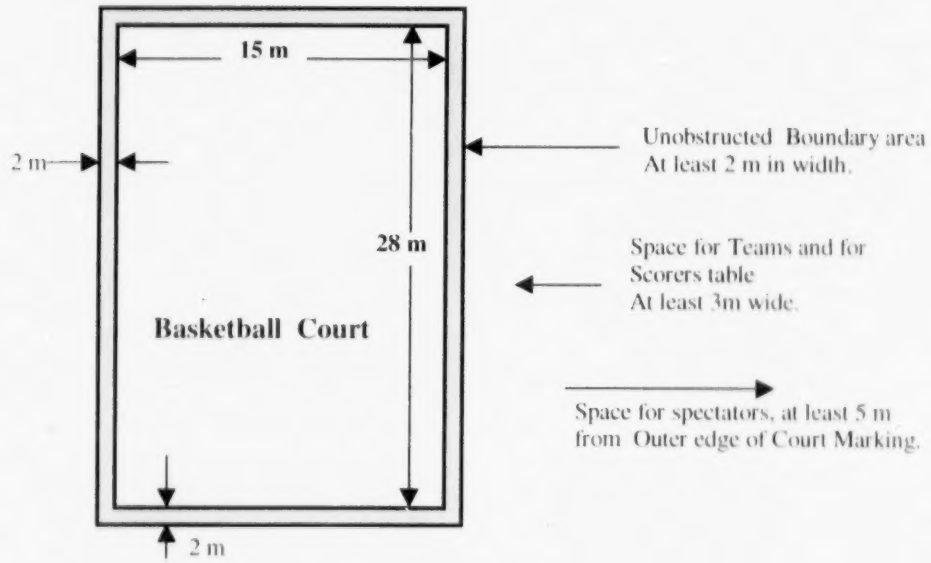
**The following is provided for informational purposes so that School Authorities can decide on the games that can be played safely within the Provision of the PE facilities.**
**The data shows the spectator requirements as required in Sports Arenas.**
**A Viewing Balcony is provided in PE halls for spectators.**

| Sport | Hall Size without provision for officials or spectators | Court Size | Clear height |
|---|---|---|---|
| Basketball | 32 x 19 m | 28 x 15 | 7 m |
| Volleyball National | 26 x 17 m | 18 x 9 m | 7 m |
| Football National | 31-48 x 21-31 m | 25-42 x 15-25 m | 7 m |
| Badminton | 18 x 10.5 m | 13.4 x 6.1 m | 9.1 m |
| Hockey | 42 – 50 x 22.2 - 26.2 m | 36 – 44 x 18 – 22 m | 7.6 m |
| Netball | 33.5 x 18.5 m | 30.5 x 15.25 m | 7.6 m |
| Tennis | 39 x 20.73 m | 23.77 x 10.97 m | 9 m |
| Football International | 44-48 x 24-28 m | 38-42 x 18-22 m | 7 m |
| Handball | 42 x 24 m | 40 x 20 m | 9 m |
| Handball Olympic | 42 x 25 m | 40 x 20 m | 12.5 m |
| Volleyball International | 40 x 25 m | 18 x 9 m | 12.5 m |

# Sports Arenas –Requirements of International Basketball Federation.

## *Federation Internationale De Basketball ( FIBA ) Requirements.*
**( International Basketball Federation )**

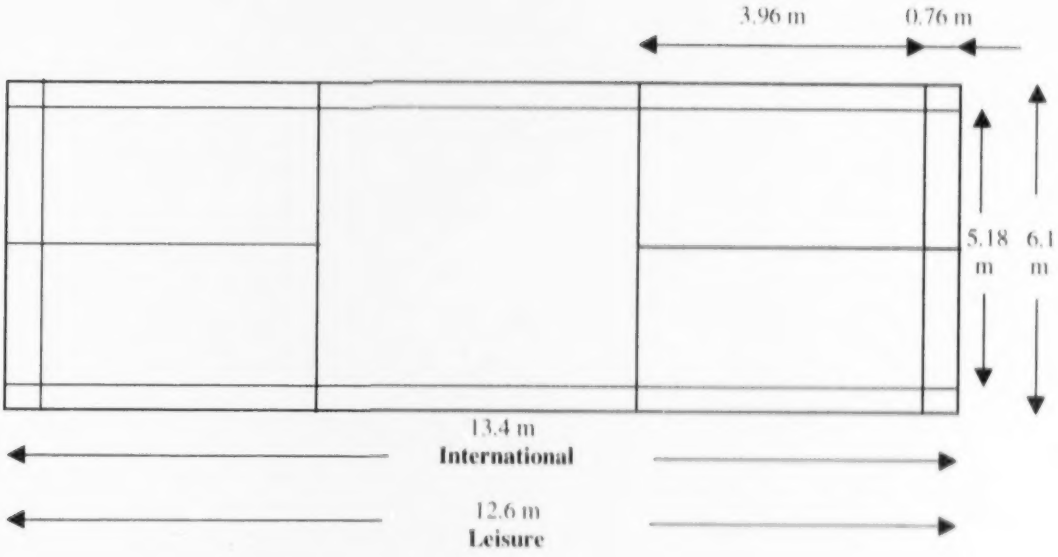
***Court dimensions and other requirements:***




- The height of the ceiling or the lowest obstruction shall be at least 7.00 m.
- The playing floor shall be made of wood.
- The playing surface shall be uniformly and adequately lighted. The light units shall be placed where they will not hinder the players' vision.
- The level of lighting shall not be less than 1500 lux measured 1.5 m above the playing court.
- The basketball goals shall be FIBA approved and floor mounted.
- The backboards shall be made of suitable transparent material (preferably tempered glass).
- Two scoreboards shall be provided, one on each end wall.

## BADMINTON COURT.

**Dimensions of Court. International**




| | |
|---|---|
| Playing Area: | |
| Length | 13.4 m |
| Width | 6.1 m |
| Wall from base-line | 2.3 m |
| Wall from sideline | 2.2 m |
| Between parallel courts | 2 m (min) |
| Minimum clear height (over whole length of court) | 9.1 m |
| Overall areas (minimum dimensions): | |
| For one court | 18 x 10.5 m |
| For a parallel pair | 18 x 18.6 m |
| For each additional parallel court | 18 x 8.1 m |

## Netball Court Dimensions International

### Playing Area

| | |
|---|---|
| Length | 30.5 m |
| Width | 15.25 m |
| Space at side lines | 1.5 m min |
| Space behind goal-lines | 1.5 m min |
| Space for officials and teams | 1.5 m |
| Clear Height | 7.6 m |

Minimum hall dimensions without provision for officials, teams or spectators. 33.5 x 18.5 m

## Volleyball Court Dimensions. International and National.

### Playing Area

| | | |
|---|---|---|
| Length | 18 m | |
| Width | 9 m | |
| Back-line clear space | 8 m | 2 m (National) |
| Side-line clear space | 5 m | 2 m (National) |
| Officials space | 3 m | 2 m (National) |
| Clear height | 12.5 m | 7 m (National) |

Minimum hall dimensions without provision for officials, teams or spectators.

40 x 25 m International 26 x 17 m National

## Tennis

### Playing Area

| | |
|---|---|
| Length | 23.77 m |
| Width | 10.97 m |
| Minimum run-back | 6.4 m |
| Minimum side-run | 3.66 m |
| Overall area per court | 39 x 20.73 m |
| Unobstructed height over net | 9m |

## Football Five-a-Side

### Playing Area

| | | |
|---|---|---|
| Length | 38-42 m International | 25-42 m National |
| Width | 18-22 m International | 15-25 m National |
| Goal-line margin | 3 m | |
| Side-line margin | 3 m | |
| Overall Area . National | 44-48 m x 24-28 m International. | 31-48 m x 21-31 m |
| Clear height | 7 m | |